IN THE CLAIMS:

Please amend the claims as indicated in the following listing of claims, which replaces all previous listings of claims.

1. (Currently Amended) A method of detecting microorganism cDNA comprising:

(a) amplifying the microorganism cDNA with bioactive primers;

(b) hybridizing the amplified microorganism cDNA with microorganism-specific probes in hybridization tubes wherein each of the probes is linked to a magnetic bead;

(c) transferring hybridization tubes to magnetic wells for washing;

(d) adding blocking solution into the tubes;

(e) adding avidin enzyme complex or streptavidin enzyme complex into the tubes, wherein the enzyme reacts with a luminescence-emission substrate;

(f) performing a washing reaction to remove interfering material by the aid of magnetic field;

(g) suspending each magnetic bead;

(h) detecting a light-emission ~~color~~ change utilizing the ~~a~~ luminescence-emission substrate; and

(i) comparing the light-emission ~~color~~ change in step (h) to a light-emission ~~color~~ change of a control sample.

2. (Previously Presented) The method of Claim 1, wherein the microorganism is *Mycobacterium tuberculosis*.

3. (Original) The method of Claim 1, wherein the microorganism cDNA are obtained from the PCR amplification mediated by bioactive primers.

4. (Previously Presented) The method of Claim 1, wherein the streptavidin enzyme complex in the step (e) is streptavidin horseradish peroxidase (SA-HRP).

5. (Previously Presented) The method of Claim 1, wherein the step (g) suspending magnetic beads is performed by vortexing the tubes.

6. (Previously Presented) The method of Claim 1, wherein the detection of the step (h) is performed by luminometer or spectrophotometer.

7. (Previously Presented) The method of Claim 1, wherein the steps (a)-(h) are performed in the same tube.

8. (Withdrawn) An apparatus for performing the dissociation of nucleic acid double strands, hybridization, washing, the separation of magnetic beads and thermal control in the same apparatus, comprising:

(a) the means for fitting reaction containers;

(b) the means for controlling the temperature of the containers; and

(c) the means for controlling the magnetic force of the containers, wherein the means for controlling the temperature of the containers are connected to the means for fitting the reaction containers, and the means for controlling the magnetic force of the containers are connected to the means for fitting reaction containers.

9. (Withdrawn) The apparatus of Claim 8, wherein the means for controlling the temperature of the containers heats the containers to perform the dissociation of nucleic acid double strands according to temperature change.

10. (Withdrawn) The apparatus of Claim 8, wherein the means for controlling the magnetic force of the containers performs the magnetic change of magnetic bead to facilitate hybridization, washing and the separation of magnetic beads in the containers.

11. (Currently Amended) A system for performing detection of microorganism cDNA comprising:

(a) a microorganism-specific probe linked to a magnetic bead;

(b) bioactive primers;

~~(c) avidin enzyme complex or streptavidin enzyme complex; and~~

~~(d) enzyme substrate.~~

(c) a luminescence-emission substrate;

(d) avidin enzyme complex or streptavidin enzyme complex, wherein the enzyme is capable of reacting with the luminescence-emission substrate.

12. (Previously Presented) The system of Claim 11, wherein the bioactive primers are made by reacting a DNA labeling reagent with the primers.

13. (Previously Presented) The system of Claim 12, wherein the DNA labeling reagent is a compound having a formula:

Fu-BE-D

wherein FU represents a Furocoumarin compound selected from the group consisting of angelicin compound and psoralen compound;

wherein BE represents none or a binding enhancer selected from the group consisting of C4-C12 alkyl, alkyenyl, polyalkylamine and polyethylene glycol; and

wherein D represents a detectable group selected from the group consisting of: biotin, fluorescence, acridinium ester and acridinium-9-carboxamide.

14. (Previously Presented) The system of Claim 12, wherein the DNA labeling reagent is 9-(4"-(Aminomethyl)-4',5"-Dimethyl-angelicin) acridinium carboxamide.

15. (Withdrawn) An assay system for detecting microorganisms, the system comprising:

(i) diagnostic kit for detecting microorganism cDNA comprising:

(a) a probe linked to a magnetic bead;

(b) bioactive primers;

(c) avadin enzyme complex or streptavidin enzyme complex; and

(d) enzyme substrate;

(ii) an apparatus for performing the dissociation of nucleic acid double strands, hybridization, washing, the separation of magnetic beads and thermal control in the same apparatus, comprising:

(a) the means for fitting reaction containers;

(b) the means for controlling the temperature of the containers; and

(c) the means for controlling the magnetic force of the containers, wherein the means for controlling the temperature of the containers are connected to the means for fitting the reaction containers, and the means for controlling the magnetic force of the containers are connected to the means for fitting reaction containers;

(iii) a magnetic rack to bind the magnetic bead on the wall of the containers; and

(iv) a detector.

16. (Withdrawn) The assay system of Claim 15, wherein the bioactive primers are made by reacting DNA labeling reagent with the primers.

17. (Withdrawn) The assay system of Claim 15, wherein the streptavidin enzyme complex in the kit is streptavidin horseradish peroxidase (SA-HRP).

18. (Withdrawn) The assay system of Claim 15, wherein the assay system differentiates *M. tuberculosis* from *M. marinum*, *M. avium* and *M. intracellulare*.

19. (Withdrawn) The assay system of Claim 15, wherein the detector is one of a luminometer and a spectrophotometer.

20. (Withdrawn) The assay system of Claim 15, wherein the DNA labeling reagent is 9-(4''-(Aminomethyl)-4',5''-Dimethyl-angelicin) acridinium carboxamide.